

# SEQUENCE LISTING

## (1) GENERAL INFORMATION:

- (i) APPLICANT: Goldstein, Gideon
- (ii) TITLE OF INVENTION: Methods and Compositions for Impairing Multiplication of HIV-1
- (iii) NUMBER OF SEQUENCES: 124
- (iv) CORRESPONDENCE ADDRESS:
  - (A) ADDRESSEE: Howson and Howson
  - (B) STREET: Spring House Corporate Cntr., P.O. Box 457
  - (C) CITY: Spring House
  - (D) STATE: PA
  - (E) COUNTRY: USA
  - (F) ZIP: 19477
- (v) COMPUTER READABLE FORM:
  - (A) MEDIUM TYPE: Floppy disk
  - (B) COMPUTER: IBM PC compatible
  - (C) OPERATING SYSTEM: PC-DOS/MS-DOS
  - (D) SOFTWARE: PatentIn Release #1.0, Version #1.30
- (vi) CURRENT APPLICATION DATA:
  - (A) APPLICATION NUMBER: US
  - (B) FILING DATE:
  - (C) CLASSIFICATION:
- (vii) PRIOR APPLICATION DATA:
  - (A) APPLICATION NUMBER: US 08/893,853
  - (B) FILING DATE: 11-JUL-1997
- (viii) ATTORNEY/AGENT INFORMATION:
  - (A) NAME: Bak, Mary E.
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  - (C) REFERENCE/DOCKET NUMBER: GGP2AUSA
- (ix) TELECOMMUNICATION INFORMATION:
  - (A) TELEPHONE: 215-540-9200
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## (2) INFORMATION FOR SEQ ID NO:1:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 72 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: protein
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1:
 

Met	Glu	Pro	Val	Asp	Pro	Arg	Leu	Glu	Pro	Trp	Lys	His	Pro	Gly	Ser
1				5					10					15	

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Gln Pro Lys Thr Ala Cys Thr Asn Cys Tyr Cys Lys Lys Cys Cys Phe  
20 25 30

His Cys Gln Val Cys Phe Thr Thr Lys Gly Leu Gly Ile Ser Tyr Gly  
35 40 45

Arg Lys Lys Arg Arg Gln Arg Arg Arg Ala Pro Gln Asp Ser Gln Thr  
50 55 60

His Gln Val Ser Leu Ser Lys Gln  
65 70

(2) INFORMATION FOR SEQ ID NO:2:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 912 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE:

- (A) NAME/KEY: CDS
- (B) LOCATION: join(1..876, 883..912)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:2:

GAG CTC TAC AAA TCC GGG GAT CCG GGT GAA GAT CCG CGT TTA GAG CCG	48
Glu Leu Tyr Lys Ser Gly Asp Pro Gly Glu Asp Pro Arg Leu Glu Pro	
1 5 10 15	
TGG AAA CAC CCG GGT TCT GGT TCT GTT GAC CCT AAC CTT GAA CCT TGG	96
Trp Lys His Pro Gly Ser Gly Ser Val Asp Pro Asn Leu Glu Pro Trp	
20 25 30	
AAG CAT CCT GGC AGC TCC GGA GTC GAT CCC AAA CTC GAG CCC TGG AAA	144
Lys His Pro Gly Ser Ser Gly Val Asp Pro Lys Leu Glu Pro Trp Lys	
35 40 45	
CAC CCC GGA AGT TCG GGG GTA GAC CCA TCT CTG GAA CCA TGG AAG CAT	192
His Pro Gly Ser Ser Gly Val Asp Pro Ser Leu Glu Pro Trp Lys His	
50 55 60	
CCA GGG AGT GGT AGC GTG AAT CCG TCA TTA GAG CCG TGG AAA CAC CCG	240
Pro Gly Ser Gly Ser Val Asn Pro Ser Leu Glu Pro Trp Lys His Pro	
65 70 75 80	
GGT TCA TCT GGA GTT GAT CCT CGC TTG GAA CCT TGG GAG CAT CCT GGT	288
Gly Ser Ser Gly Val Asp Pro Arg Leu Glu Pro Trp Glu His Pro Gly	
85 90 95	
TCG TCC GGT GTA GAC CCC CGA CTT GAG CCC TGG AAT CAC CTC GGG AGT	336
Ser Ser Gly Val Asp Pro Arg Leu Glu Pro Trp Asn His Leu Gly Ser	
100 105 110	

TCA GGC GTA GAT CAT CGG CTC GAA CCA TGG AAA CAT CCA GGT TCT GGA Ser Gly Val Asp His Arg Leu Glu Pro Trp Lys His Pro Gly Ser Gly	384
115 120 125	
GAT CTG CGC CAG CGG CGA CGT ACT CCT CAG GAT TCT GGA TCT CGA CAA Asp Leu Arg Gln Arg Arg Arg Thr Pro Gln Asp Ser Gly Ser Arg Gln	432
130 135 140	
CGT CGG CGC CCT CCC CAA GAC TCC TCA GGA CGG CAG CGC CGA CGA CCC Arg Arg Arg Pro Pro Gln Asp Ser Ser Gly Arg Gln Arg Arg Arg Pro	480
145 150 155 160	
CCA CAG GGT TCA GGT TCA CGT CAA CGA CGC GGT CCA CCC CAA GGC TCG Pro Gln Gly Ser Ser Arg Gln Arg Arg Gly Pro Pro Gln Gly Ser	528
165 170 175	
GGT TCG CGC CAG CGG CGA CGT CCG CCT CAG AAC TCT AGT GGA CGA CAA Gly Ser Arg Gln Arg Arg Arg Pro Pro Gln Asn Ser Ser Gly Arg Gln	576
180 185 190	
CGT CGG CGC TCT CCC CAA GAT TCC GGC GGG CGG CAG CGC CGT CGA TCA Arg Arg Arg Ser Pro Gln Asp Ser Gly Gly Arg Gln Arg Arg Arg Ser	624
195 200 205	
CCA CAG AAC TCA GGT GGG CGT CAA CGA CGC CGG ACT CCG CAA TCT TCA Pro Gln Asn Ser Gly Gly Arg Gln Arg Arg Arg Thr Pro Gln Ser Ser	672
210 215 220	
TCC GGC CGC CAG CGG CGA CGT GCC CAT CAG AAT AGC GGC AGC CGA CAA Ser Gly Arg Gln Arg Arg Ala His Gln Asn Ser Gly Ser Arg Gln	720
225 230 235 240	
CGT CGG CGC GCA CAC CAA GAC AGC AGT GGG CGG CAG CGC CGT CGA GCG Arg Arg Arg Ala His Gln Asp Ser Ser Gly Arg Gln Arg Arg Arg Ala	768
245 250 255	
CCT GAA GAT AGT GGT TCT CGT CAA CGA CGC CGG GCT CCC CCT GAC AGC Pro Glu Asp Ser Gly Ser Arg Gln Arg Arg Arg Ala Pro Pro Asp Ser	816
260 265 270	
TCC GGA CGC CAG CGG CAA CGT GCA CCA GAT AGT TCC TCA GGT CAT CAC Ser Gly Arg Gln Arg Gln Arg Ala Pro Asp Ser Ser Ser Gly His His	864
275 280 285	
CAC CAT CAT CAC TAATAA GAA TTC GGA TCC TCT AGA GTC GAC AAG CTT His His His His Glu Phe Gly Ser Ser Arg Val Asp Lys Leu	912
290 295 300	

## (2) INFORMATION FOR SEQ ID NO:3:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 302 amino acids
  - (B) TYPE: amino acid
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:3:

Glu 1	Leu	Tyr	Lys	Ser 5	Gly	Asp	Pro	Gly	Glu 10	Asp	Pro	Arg	Leu	Glu 15	Pro
Trp	Lys	His	Pro 20	Gly	Ser	Gly	Ser	Val 25	Asp	Pro	Asn	Leu	Glu 30	Pro	Trp
Lys	His	Pro 35	Gly	Ser	Ser	Gly	Val 40	Asp	Pro	Lys	Leu	Glu 45	Pro	Trp	Lys
His	Pro 50	Gly	Ser	Ser	Gly	Val 55	Asp	Pro	Ser	Leu	Glu 60	Pro	Trp	Lys	His
Pro 65	Gly	Ser	Gly	Ser	Val 70	Asn	Pro	Ser	Leu	Glu 75	Pro	Trp	Lys	His	Pro 80
Gly	Ser	Ser	Gly	Val 85	Asp	Pro	Arg	Leu	Glu 90	Pro	Trp	Glu	His	Pro 95	Gly
Ser	Ser	Gly	Val 100	Asp	Pro	Arg	Leu	Glu 105	Pro	Trp	Asn	His	Leu	Gly	Ser
Ser	Gly	Val 115	Asp	His	Arg	Leu	Glu 120	Pro	Trp	Lys	His	Pro 125	Gly	Ser	Gly
Asp 130	Leu	Arg	Gln	Arg	Arg	Arg 135	Thr	Pro	Gln	Asp	Ser 140	Gly	Ser	Arg	Gln
Arg 145	Arg	Arg	Pro	Pro	Gln	Asp 150	Ser	Ser	Gly	Arg 155	Gln	Arg	Arg	Arg	Pro 160
Pro	Gln	Gly	Ser	Gly 165	Ser	Arg	Gln	Arg	Arg 170	Gly	Pro	Pro	Gln	Gly 175	Ser
Gly	Ser	Arg	Gln 180	Arg	Arg	Arg	Pro 185	Gln	Asn	Ser	Ser	Gly 190	Arg	Gln	
Arg	Arg	Arg 195	Ser	Pro	Gln	Asp 200	Ser	Gly	Gly	Arg	Gln	Arg 205	Arg	Arg	Ser
Pro 210	Gln	Asn	Ser	Gly	Gly	Arg 215	Gln	Arg	Arg	Arg	Thr 220	Pro	Gln	Ser	Ser
Ser 225	Gly	Arg	Gln	Arg	Arg	Arg 230	Ala	His	Gln	Asn 235	Ser	Gly	Ser	Arg	Gln 240
Arg	Arg	Arg	Ala	His 245	Gln	Asp	Ser	Ser	Gly 250	Arg	Gln	Arg	Arg	Arg	Ala 255
Pro	Glu	Asp	Ser 260	Gly	Ser	Arg	Gln	Arg 265	Arg	Arg	Ala	Pro	Pro 270	Asp	Ser
Ser	Gly	Arg 275	Gln	Arg	Gln	Arg	Ala 280	Pro	Asp	Ser	Ser	Ser 285	Gly	His	His

His His His His Glu Phe Gly Ser Ser Arg Val Asp Lys Leu  
290 295 300

(2) INFORMATION FOR SEQ ID NO:4:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 9 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:4:

Arg Lys Lys Arg Arg Gln Arg Arg Arg  
1 5

(2) INFORMATION FOR SEQ ID NO:5:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 6 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:5:

Gly Arg Gly Asp Ser Pro  
1 5

(2) INFORMATION FOR SEQ ID NO:6:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 7 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:6:

Val Asp Pro Arg Leu Glu Pro  
1 5

(2) INFORMATION FOR SEQ ID NO:7:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 7 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:7:

Val Asp Pro Lys Leu Glu Pro  
1 5

(2) INFORMATION FOR SEQ ID NO:8:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 7 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS:  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:8:

Val Asp Pro Ser Leu Glu Pro  
1 5

(2) INFORMATION FOR SEQ ID NO:9:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 7 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS:  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:9:

Val Asp Pro Asn Leu Glu Pro  
1 5

(2) INFORMATION FOR SEQ ID NO:10:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 6 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS:  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

(A) NAME/KEY: Binding-site  
(B) LOCATION: 6

(D) OTHER INFORMATION: /note= "an amide is attached to the  
Ser in position 6"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:10:

Trp Lys His Pro Gly Ser  
1 5

(2) INFORMATION FOR SEQ ID NO:11:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 6 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:11:

Gly Pro Arg Leu Glu Pro  
1 5

(2) INFORMATION FOR SEQ ID NO:12:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 6 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:12:

Ala Pro Arg Leu Glu Pro  
1 5

(2) INFORMATION FOR SEQ ID NO:13:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 6 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:13:

His Pro Arg Leu Glu Pro  
1 5

(2) INFORMATION FOR SEQ ID NO:14:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 6 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

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(xi) SEQUENCE DESCRIPTION: SEQ ID NO:14:

Asp Pro Gly Leu Glu Pro  
1 5

(2) INFORMATION FOR SEQ ID NO:15:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 6 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS:  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:15:

Asp Pro Arg Ile Glu Pro  
1 5

(2) INFORMATION FOR SEQ ID NO:16:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 6 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS:  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:16:

Asp Pro Arg Leu Gly Pro  
1 5

(2) INFORMATION FOR SEQ ID NO:17:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 6 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS:  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:17:

Asp Pro Arg Leu Glu Ala  
1 5

(2) INFORMATION FOR SEQ ID NO:18:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 6 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS:  
(D) TOPOLOGY: linear



(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:18:

Asn Pro Ser Leu Glu Pro  
1 5

(2) INFORMATION FOR SEQ ID NO:19:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 7 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS:  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:19:

Arg Arg Ala Pro Gln Asp Ser  
1 5

(2) INFORMATION FOR SEQ ID NO:20:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 9 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS:  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:20:

Gln Arg Arg Arg Ala Pro Gln Asp Ser  
1 5

(2) INFORMATION FOR SEQ ID NO:21:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 9 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS:  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:21:

Gln Arg Arg Arg Ala His Gln Asp Ser  
1 5

(2) INFORMATION FOR SEQ ID NO:22:

- (i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 9 amino acids  
    (B) TYPE: amino acid  
    (C) STRANDEDNESS:  
    (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:22:

Gln Arg Arg Arg Ala Pro Pro Asp Ser  
1                    5

(2) INFORMATION FOR SEQ ID NO:23:

- (i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 7 amino acids  
    (B) TYPE: amino acid  
    (C) STRANDEDNESS:  
    (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:23:

Arg Arg Pro Pro Gln Asp Asn  
1                    5

(2) INFORMATION FOR SEQ ID NO:24:

- (i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 7 amino acids  
    (B) TYPE: amino acid  
    (C) STRANDEDNESS:  
    (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:24:

Arg Arg Ala Pro Gln Asp Arg  
1                    5

(2) INFORMATION FOR SEQ ID NO:25:

- (i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 7 amino acids  
    (B) TYPE: amino acid  
    (C) STRANDEDNESS:  
    (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:25:

Arg Gly Ala Pro Gln Asp Ser  
1 5

(2) INFORMATION FOR SEQ ID NO:26:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 7 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS:  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:26:

Arg Arg Ala Pro Glu Asp Ser  
1 5

(2) INFORMATION FOR SEQ ID NO:27:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 7 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS:  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:27:

Arg Arg Ala Ser Gln Asp Ser  
1 5

(2) INFORMATION FOR SEQ ID NO:28:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 13 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS:  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

(A) NAME/KEY: Modified-site  
(B) LOCATION: 13  
(D) OTHER INFORMATION: /note= "Ser in position 13 is  
optionally modified with NH2"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:28:

Val Asp Pro Arg Leu Glu Pro Trp Lys His Pro Gly Ser  
1 5 10

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(2) INFORMATION FOR SEQ ID NO:29:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 10 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:29:

Arg Gln Arg Arg Arg Ala Pro Gln Asp Ser  
1 5 10

(2) INFORMATION FOR SEQ ID NO:30:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 4 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:30:

Ser Gly Ser Gly  
1

(2) INFORMATION FOR SEQ ID NO:31:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 12 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:31:

Val Asp Pro Arg Leu Pro Trp Lys His Pro Gly Ser  
1 5 10

(2) INFORMATION FOR SEQ ID NO:32:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 11 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:32:

Asp Pro Arg Leu Pro Trp Lys His Pro Gly Ser  
1 5 10

(2) INFORMATION FOR SEQ ID NO:33:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 7 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS:  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:33:

Val Asp Pro Arg Leu Pro Trp  
1 5

(2) INFORMATION FOR SEQ ID NO:34:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 6 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS:  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:34:

Val Asp Pro Arg Leu Pro  
1 5

(2) INFORMATION FOR SEQ ID NO:35:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 5 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS:  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:35:

Val Asp Pro Arg Leu  
1 5

(2) INFORMATION FOR SEQ ID NO:36:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 9 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS:  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

(A) NAME/KEY: Modified-site

(B) LOCATION: 1

(D) OTHER INFORMATION: /note= "Xaa in the first position may be absent, or may be 1-5 aa, which may be optionally modified with a lower alkyl or a lower alkanoyl, or Xaa may be X-Pro, wherein X is Glu or Asp."

(ix) FEATURE:

(A) NAME/KEY: Modified-site

(B) LOCATION: 2

(D) OTHER INFORMATION: /note= "Val in position 2 is optionally modified with a lower alkyl or a lower alkanoyl when Xaa in the first position is absent."

(ix) FEATURE:

(A) NAME/KEY: Modified-site

(B) LOCATION: 5

(D) OTHER INFORMATION: /note= "The 5th position amino acid can be Arg, Lys Ser or Asn"

(ix) FEATURE:

(A) NAME/KEY: Modified-site

(B) LOCATION: 8

(D) OTHER INFORMATION: /note= "Pro in position 8 is optionally amidated, when it is the C terminal amino acid."

(ix) FEATURE:

(A) NAME/KEY: Modified-site

(B) LOCATION: 9

(D) OTHER INFORMATION: /note= "The 9th position amino acid may be absent or a sequence of 1-14 amino acids amidated at the carboxyl terminus."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:36:

Xaa Val Asp Pro Xaa Leu Glu Pro Xaa  
1 5

(2) INFORMATION FOR SEQ ID NO:37:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 13 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS:

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

## (ix) FEATURE:

(A) NAME/KEY: Modified-site  
 (B) LOCATION: 1  
 (D) OTHER INFORMATION: /note= "Xaa in the first position may be absent or may be optionally 1-5 amino acids, optionally modified with a lower alkyl or lower alkanoyl at the N terminus."

## (ix) FEATURE:

(A) NAME/KEY: Modified-site  
 (B) LOCATION: 2  
 (D) OTHER INFORMATION: /note= "Lys in position 2 is optionally modified with a lower alkyl or a lower alkanoyl, when the first position Xaa is absent."

## (ix) FEATURE:

(A) NAME/KEY: Modified-site  
 (B) LOCATION: 3  
 (D) OTHER INFORMATION: /note= "The 3rd position amino acid can be either Gly or Ala."

## (ix) FEATURE:

(A) NAME/KEY: Modified-site  
 (B) LOCATION: 12  
 (D) OTHER INFORMATION: /note= "Lys in position 12 is optionally amidated, when it is the C terminal amino acid."

## (ix) FEATURE:

(A) NAME/KEY: Modified-site  
 (B) LOCATION: 13  
 (D) OTHER INFORMATION: /note= "The 13th position amino acid may be absent or may be a sequence of 1-5 additional amino acids, optionally substituted with an amide."

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:37:

Xaa Lys Xaa Leu Gly Ile Ser Tyr Gly Arg Lys Lys Xaa  
 1                      5                      10

## (2) INFORMATION FOR SEQ ID NO:38:

## (i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 8 amino acids  
 (B) TYPE: amino acid  
 (C) STRANDEDNESS:  
 (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: peptide

## (ix) FEATURE:

(A) NAME/KEY: Modified-site  
 (B) LOCATION: 1  
 (D) OTHER INFORMATION: /note= "The first position Xaa can be absent or a sequence of 1-3 aa, optionally modified with a lower alkyl or lower alkanoyl; or it can be Gln-Arg, optionally modified with a lower alkyl or lower alkanoyl."

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- (ix) FEATURE:  
    (A) NAME/KEY: Modified-site  
    (B) LOCATION: 2  
    (D) OTHER INFORMATION: /note= "Arg in position 2 is optionally modified with a lower alkyl or a lower alkanoyl, when it is the N terminal amino acid."
- (ix) FEATURE:  
    (A) NAME/KEY: Modified-site  
    (B) LOCATION: 4  
    (D) OTHER INFORMATION: /note= "The 4th position amino acid can be Ala, Pro, Ser or Gln."
- (ix) FEATURE:  
    (A) NAME/KEY: Modified-site  
    (B) LOCATION: 5  
    (D) OTHER INFORMATION: /note= "The 5th position amino acid can be Pro or His."
- (ix) FEATURE:  
    (A) NAME/KEY: Modified-site  
    (B) LOCATION: 6  
    (D) OTHER INFORMATION: /note= "The 6th position amino acid can be Gln or Pro."
- (ix) FEATURE:  
    (A) NAME/KEY: Modified-site  
    (B) LOCATION: 7  
    (D) OTHER INFORMATION: /note= "The 7th position amino acid can be Asp, Asn, Gly or Ser."
- (ix) FEATURE:  
    (A) NAME/KEY: Modified-site  
    (B) LOCATION: 8  
    (D) OTHER INFORMATION: /note= "Ser in position 8 is optionally amidated."
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:38:
- Xaa Arg Arg Xaa Xaa Xaa Xaa Ser  
1                    5
- (2) INFORMATION FOR SEQ ID NO:39:
- (i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 14 amino acids  
    (B) TYPE: amino acid  
    (C) STRANDEDNESS:  
    (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide



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(ix) FEATURE:  
    (A) NAME/KEY: Modified-site  
    (B) LOCATION: 1  
    (D) OTHER INFORMATION: /note= "Xaa in the first position  
can be absent or is optionally 1-3 amino acids, optionally  
modified with a lower alkyl or lower alkanoyl."

(ix) FEATURE:  
    (A) NAME/KEY: Modified-site  
    (B) LOCATION: 2  
    (D) OTHER INFORMATION: /note= "Ser in position 2 is  
optionally modified with a lower alkyl or lower alkanoyl, when  
it is the N terminal amino acid."

(ix) FEATURE:  
    (A) NAME/KEY: Modified-site  
    (B) LOCATION: 4  
    (D) OTHER INFORMATION: /note= "The 4th position amino acid  
can be Asn or Thr."

(ix) FEATURE:  
    (A) NAME/KEY: Modified-site  
    (B) LOCATION: 7  
    (D) OTHER INFORMATION: /note= "The 7th position amino acid  
can be Ala or Val."

(ix) FEATURE:  
    (A) NAME/KEY: Modified-site  
    (B) LOCATION: 13  
    (D) OTHER INFORMATION: /note= "Pro in position 13 is  
optionally amidated when it is the C terminal amino acid."

(ix) FEATURE:  
    (A) NAME/KEY: Modified-site  
    (B) LOCATION: 14  
    (D) OTHER INFORMATION: /note= "Xaa in position 14 can be  
absent or is optionally 1-3 amino acids, optionally substituted  
with an amide."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:39:

Xaa	Ser	Gln	Xaa	His	Gln	Xaa	Ser	Leu	Ser	Lys	Gln	Pro	Xaa
1				5					10				

(2) INFORMATION FOR SEQ ID NO:40:

(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 12 amino acids  
    (B) TYPE: amino acid  
    (C) STRANDEDNESS:  
    (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:40:

Ser Gln Thr His Gln Ala Ser Leu Ser Lys Gln Pro  
1 5 10

(2) INFORMATION FOR SEQ ID NO:41:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 6 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:41:

Asp His Arg Leu Glu Pro  
1 5

(2) INFORMATION FOR SEQ ID NO:42:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 6 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:42:

Asp Pro Asn Leu Asp Pro  
1 5

(2) INFORMATION FOR SEQ ID NO:43:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 6 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:43:

Asp Pro Asn Ile Glu Pro  
1 5

(2) INFORMATION FOR SEQ ID NO:44:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 6 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

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(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:44:

Asp Pro Asn Leu Glu Ser  
1 5

(2) INFORMATION FOR SEQ ID NO:45:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 13 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS:  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:45:

Val Asp Pro Lys Leu Glu Pro Trp Lys His Pro Gly Ser  
1 5 10

(2) INFORMATION FOR SEQ ID NO:46:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 13 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS:  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:46:

Val Asp Pro Ser Leu Glu Pro Trp Lys His Pro Gly Ser  
1 5 10

(2) INFORMATION FOR SEQ ID NO:47:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 13 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS:  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:47:

Val Asp Pro Asn Leu Glu Pro Trp Lys His Pro Gly Ser  
1 5 10

(2) INFORMATION FOR SEQ ID NO:48:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 13 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:48:

Val Asn Pro Ser Leu Glu Pro Trp Lys His Pro Gly Ser  
 1                      5                      10

(2) INFORMATION FOR SEQ ID NO:49:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 13 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:49:

Val Asp His Arg Leu Glu Pro Trp Lys His Pro Gly Ser  
 1                      5                      10

(2) INFORMATION FOR SEQ ID NO:50:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 7 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:50:

Arg Arg Ala Pro Pro Asp Asn  
 1                      5

(2) INFORMATION FOR SEQ ID NO:51:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 7 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:51:

Arg Arg Ala Pro Gln Gly Asn  
1 5

(2) INFORMATION FOR SEQ ID NO:52:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 10 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS:  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:52:

Arg Gln Arg Arg Arg Ala His Gln Asn Ser  
1 5 10

(2) INFORMATION FOR SEQ ID NO:53:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 10 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS:  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:53:

Arg Gln Arg Arg Arg Pro Pro Gln Asp Ser  
1 5 10

(2) INFORMATION FOR SEQ ID NO:54:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 21 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS:  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:54:

Met Glu Pro Val Asp Pro Arg Leu Glu Pro Trp Lys His Pro Gly Ser  
1 5 10 15

Gln Pro Lys Thr Ala  
20

(2) INFORMATION FOR SEQ ID NO:55:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 36 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:55:

Phe Ile Thr Lys Gly Leu Gly Ile Ser Tyr Gly Arg Lys Lys Arg Arg  
1                   5                   10                   15  
Gln Arg Arg Arg Ala Pro Gln Asp Ser Gln Thr His Gln Val Ser Leu  
                  20                   25                   30  
Ser Lys Gln Pro  
                  35

(2) INFORMATION FOR SEQ ID NO:56:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 9 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:56:

Glu Pro Val Asp Pro Lys Leu Glu Pro  
1                   5

(2) INFORMATION FOR SEQ ID NO:57:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 7 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:57:

Val Asp Pro Lys Leu Gly Pro  
1                   5

(2) INFORMATION FOR SEQ ID NO:58:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 13 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- (ix) FEATURE:
  - (A) NAME/KEY: Modified-site
  - (B) LOCATION: 4
  - (D) OTHER INFORMATION: /note= "Amino acid in position 4 can be Arg, Lys, Ser or Asn."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:58:

Val Asp Pro Xaa Leu Glu Pro Tyr Lys His Pro Gly Ser  
1                    5                    10

(2) INFORMATION FOR SEQ ID NO:59:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 10 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:59:

Arg Gln Arg Arg Arg Pro Pro Gln Gly Ser  
1                    5                    10

(2) INFORMATION FOR SEQ ID NO:60:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 10 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:60:

Arg Gln Arg Arg Gly Pro Pro Gln Gly Ser  
1                    5                    10

(2) INFORMATION FOR SEQ ID NO:61:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 10 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:61:

Arg	Gln	Arg	Arg	Arg	Pro	Pro	Gln	Asn	Ser
1				5					10

(2) INFORMATION FOR SEQ ID NO:62:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 10 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:62:

Arg	Gln	Arg	Arg	Arg	Ser	Pro	Gln	Asp	Ser
1				5					10

(2) INFORMATION FOR SEQ ID NO:63:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 10 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:63:

Arg	Gln	Arg	Arg	Arg	Ser	Pro	Gln	Asn	Ser
1				5					10

(2) INFORMATION FOR SEQ ID NO:64:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 10 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide



(xi) SEQUENCE DESCRIPTION: SEQ ID NO:64:

Arg Gln Arg Arg Arg Thr Pro Gln Ser Ser  
1 5 10

(2) INFORMATION FOR SEQ ID NO:65:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 10 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS:
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:65:

Arg Gln Arg Arg Arg Ala His Gln Asp Ser  
1 5 10

(2) INFORMATION FOR SEQ ID NO:66:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 10 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS:
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:66:

Arg Gln Arg Arg Arg Ala Pro Pro Asp Ser  
1 5 10

(2) INFORMATION FOR SEQ ID NO:67:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 22 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS:
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
- (B) LOCATION: 22
- (D) OTHER INFORMATION: /note= "An amide is attached to the Lys in position 22."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:67:

Cys Glu Pro Val Asp Pro Lys Leu Glu Pro Trp Lys Glu Leu Gly Ile  
1 5 10 15  
Ser Tyr Gly Arg Lys Lys  
20

(2) INFORMATION FOR SEQ ID NO:68:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 7 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS:  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:68:

Arg Arg Thr Pro Gln Gly Ser  
1 5

(2) INFORMATION FOR SEQ ID NO:69:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 7 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS:  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:69:

Arg Arg Ala Pro Gln Gly Ser  
1 5

(2) INFORMATION FOR SEQ ID NO:70:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 7 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS:  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:70:

Arg Arg Thr Pro Gln Asp Ser  
1 5

(2) INFORMATION FOR SEQ ID NO:71:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 18 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:71:

Val Asp Pro Arg Leu Glu Pro Trp Lys His Pro Gly Ser Gln Pro Lys  
1                      5                      10                      15

Thr Ala

(2) INFORMATION FOR SEQ ID NO:72:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 7 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:72:

Arg Arg Ala Pro Gln Asn Ser  
1                      5

(2) INFORMATION FOR SEQ ID NO:73:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 7 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:73:

Arg Arg Ser Pro Gln Asp Ser  
1                      5

(2) INFORMATION FOR SEQ ID NO:74:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 11 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:74:

Cys Arg Gln Arg Arg Arg Ala Pro Gln Asp Ser  
1 5 10

(2) INFORMATION FOR SEQ ID NO:75:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 7 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS:

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:75:

Arg Arg Pro Pro Gln Asp Ser  
1 5

(2) INFORMATION FOR SEQ ID NO:76:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 7 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS:

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:76:

Arg Arg Pro Pro Gln Asn Ser  
1 5

(2) INFORMATION FOR SEQ ID NO:77:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 7 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS:

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:77:

Arg Arg Pro Pro Gln Gly Ser  
1 5

(2) INFORMATION FOR SEQ ID NO:78:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 7 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:78:

Arg Arg Ser Pro Gln Asn Ser  
1 5

(2) INFORMATION FOR SEQ ID NO:79:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 7 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:79:

Arg Arg Ala Pro Gln Ser Ser  
1 5

(2) INFORMATION FOR SEQ ID NO:80:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 7 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:80:

Arg Arg Ser Pro Gln Gly Ser  
1 5

(2) INFORMATION FOR SEQ ID NO:81:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 7 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:81:

Arg Arg Thr Pro Gln Asn Ser  
1 5

(2) INFORMATION FOR SEQ ID NO:82:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 10 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:82:

Arg Gln Arg Gln Arg Ala Pro Asp Ser Ser  
1 5 10

(2) INFORMATION FOR SEQ ID NO:83:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 10 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:83:

Arg Gln Arg Arg Arg Ala Pro Glu Asp Ser  
1 5 10

(2) INFORMATION FOR SEQ ID NO:84:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 13 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (A) NAME/KEY: Binding-site
- (B) LOCATION: 13
- (D) OTHER INFORMATION: /note= "an amide is attached to the Ser in position 13"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:84:

Cys Val Asp Pro Asn Leu Glu Pro Trp His Pro Gly Ser  
1 5 10

(2) INFORMATION FOR SEQ ID NO:85:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 17 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:85:

Ser Gly Ser Gly Val Asp Pro Asn Leu Glu Pro Trp Lys His Pro Gly  
1                      5                      10                      15

Ser

(2) INFORMATION FOR SEQ ID NO:86:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 7 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
- (B) LOCATION: 4
- (D) OTHER INFORMATION: /note= "Amino acid in position 4  
can be Arg, Lys, Ser or Asn."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:86:

Val Asp Pro Xaa Leu Glu Pro  
1                      5

(2) INFORMATION FOR SEQ ID NO:87:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 11 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
- (B) LOCATION: 2
- (D) OTHER INFORMATION: /note= "Amino acid in position 2  
can be Gly or Ala"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:87:

Lys Xaa Leu Gly Ile Ser Tyr Gly Arg Lys Lys  
1 5 10

(2) INFORMATION FOR SEQ ID NO:88:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 7 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS:
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
- (B) LOCATION: 3
- (D) OTHER INFORMATION: /note= "Amino acid in position 3 can be Ala, Pro, Ser or Gln."

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
- (B) LOCATION: 4
- (D) OTHER INFORMATION: /note= "Amino acid in position 4 can be Pro or His."

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
- (B) LOCATION: 5
- (D) OTHER INFORMATION: /note= "Amino acid in position 5 can be Gln or Pro."

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
- (B) LOCATION: 6
- (D) OTHER INFORMATION: /note= "Amino acid in position 6 can be Asp, Asn, Gly or Ser."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:88:

Arg Arg Xaa Xaa Xaa Xaa Ser  
1 5

(2) INFORMATION FOR SEQ ID NO:89:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 12 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS:
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide



(ix) FEATURE:  
    (A) NAME/KEY: Modified-site  
    (B) LOCATION: 3  
    (D) OTHER INFORMATION: /note= "Amino acid in position 3  
can be Asn or Thr."

(ix) FEATURE:  
    (A) NAME/KEY: Modified-site  
    (B) LOCATION: 6  
    (D) OTHER INFORMATION: /note= "Amino acid in position 6  
can be Ala or Val."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:89:

Ser Gln Xaa His Gln Xaa Ser Leu Ser Lys Gln Pro  
1                    5                    10

(2) INFORMATION FOR SEQ ID NO:90:

(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 4 amino acids  
    (B) TYPE: amino acid  
    (C) STRANDEDNESS:  
    (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:90:

Gly Ser Gly Ser  
1

(2) INFORMATION FOR SEQ ID NO:91:

(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 4 amino acids  
    (B) TYPE: amino acid  
    (C) STRANDEDNESS:  
    (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:  
    (A) NAME/KEY: Modified-site  
    (B) LOCATION: 4  
    (D) OTHER INFORMATION: /note= "Biocytin-amide is attached  
to Ser in position 4.."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:91:

Gly Ser Gly Ser  
1

(2) INFORMATION FOR SEQ ID NO:92:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 8 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- (ix) FEATURE:
  - (A) NAME/KEY: Modified-site
  - (B) LOCATION: 8
  - (D) OTHER INFORMATION: /note= "NH2 is attached to the Trp in position 8"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:92:

Val Asp Pro Arg Leu Glu Pro Trp  
1 5

(2) INFORMATION FOR SEQ ID NO:93:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 7 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- (ix) FEATURE:
  - (A) NAME/KEY: Modified-site
  - (B) LOCATION: 7
  - (D) OTHER INFORMATION: /note= "NH2 is attached to Pro in position 7"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:93:

Val Asp Pro Arg Leu Glu Pro  
1 5

(2) INFORMATION FOR SEQ ID NO:94:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 6 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide

(ix) FEATURE:  
    (A) NAME/KEY: Modified-site  
    (B) LOCATION: 6  
    (D) OTHER INFORMATION: /note= "NH2 is attached to the Glu  
in position 6"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:94:

Val Asp Pro Arg Leu Glu  
1                    5

(2) INFORMATION FOR SEQ ID NO:95:

(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 5 amino acids  
    (B) TYPE: amino acid  
    (C) STRANDEDNESS:  
    (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:95:

Val Asp Pro Arg Leu  
1                    5

(2) INFORMATION FOR SEQ ID NO:96:

(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 7 amino acids  
    (B) TYPE: amino acid  
    (C) STRANDEDNESS:  
    (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:96:

Asp Pro Arg Leu Glu Pro Trp  
1                    5

(2) INFORMATION FOR SEQ ID NO:97:

(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 6 amino acids  
    (B) TYPE: amino acid  
    (C) STRANDEDNESS:  
    (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:97:

Gly Pro Arg Leu Glu Pro  
1                    5

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## (2) INFORMATION FOR SEQ ID NO:98:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 6 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:98:

Ala Pro Arg Leu Glu Pro  
1 5

## (2) INFORMATION FOR SEQ ID NO:99:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 15 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:99:

Glu Pro Val Asp Pro Arg Leu Glu Pro Trp Lys His Pro Gly Ser  
1 5 10 15

## (2) INFORMATION FOR SEQ ID NO:100:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 11 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:100:

Val Asp Pro Arg Leu Glu Pro Trp Lys His Pro  
1 5 10

## (2) INFORMATION FOR SEQ ID NO:101:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 9 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

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(xi) SEQUENCE DESCRIPTION: SEQ ID NO:101:

Val Asp Pro Arg Leu Glu Pro Trp Lys  
1 5

(2) INFORMATION FOR SEQ ID NO:102:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 7 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS:  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

(A) NAME/KEY: Modified-site  
(B) LOCATION: 7  
(D) OTHER INFORMATION: /note= "NH<sub>2</sub> is attached to Pro in position 7"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:102:

Val Asp Pro Arg Leu Glu Pro  
1 5

(2) INFORMATION FOR SEQ ID NO:103:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 10 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS:  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:103:

Met Asp Pro Val Asp Pro Arg Leu Glu Pro  
1 5 10

(2) INFORMATION FOR SEQ ID NO:104:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 12 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS:  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:104:

Met Asp Pro Val Asp Pro Arg Leu Glu Pro Trp Lys  
1 5 10

(2) INFORMATION FOR SEQ ID NO:105:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 18 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:105:

Phe Ile Thr Lys Gly Leu Gly Ile Ser Tyr Gly Arg Lys Lys Arg Arg  
1                   5                   10                   15

Gln Arg

(2) INFORMATION FOR SEQ ID NO:106:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 11 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:106:

Lys Ala Leu Gly Ile Ser Tyr Gly Arg Lys Lys  
1                   5                   10

(2) INFORMATION FOR SEQ ID NO:107:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 10 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
- (B) LOCATION: 10
- (D) OTHER INFORMATION: /note= "NH2 is attached to Ser in position 10"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:107:

Arg Gln Arg Arg Arg Ala Pro Gln Asp Ser  
1                   5                   10

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(2) INFORMATION FOR SEQ ID NO:108:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 8 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
- (B) LOCATION: 8
- (D) OTHER INFORMATION: /note= "NH2 is attached to Ser in position 8"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:108:

Gly Arg Arg Ala Pro Gln Asp Ser  
1 5

(2) INFORMATION FOR SEQ ID NO:109:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 11 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
- (B) LOCATION: 11
- (D) OTHER INFORMATION: /note= "NH2 is attached to Gln in position 11"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:109:

Arg Arg Ala Pro Gln Asp Ser Gln Thr His Gln  
1 5 10

(2) INFORMATION FOR SEQ ID NO:110:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 7 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
- (B) LOCATION: 3
- (D) OTHER INFORMATION: /note= "Amino acid in position 3 can be Ala, Pro, Ser or Gln"

(ix) FEATURE:  
    (A) NAME/KEY: Modified-site  
    (B) LOCATION: 6  
    (D) OTHER INFORMATION: /note= "Amino acid in position 6  
can be Asp, Asn, Gly or Ser"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:110:

Arg Arg Xaa Pro Gln Xaa Ser  
1                    5

(2) INFORMATION FOR SEQ ID NO:111:

(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 13 amino acids  
    (B) TYPE: amino acid  
    (C) STRANDEDNESS:  
    (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:111:

Ser Gln Thr His Gln Val Ser Leu Ser Lys Gln Pro Cys  
1                    5                    10

(2) INFORMATION FOR SEQ ID NO:112:

(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 12 amino acids  
    (B) TYPE: amino acid  
    (C) STRANDEDNESS:  
    (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:112:

Ser Gln Thr His Gln Val Ser Leu Ser Lys Gln Pro  
1                    5                    10

(2) INFORMATION FOR SEQ ID NO:113:

(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 12 amino acids  
    (B) TYPE: amino acid  
    (C) STRANDEDNESS:  
    (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:113:

Ser Gln Asn His Gln Val Ser Leu Ser Lys Gln Pro  
1                    5                    10

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(2) INFORMATION FOR SEQ ID NO:114:

- (i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 12 amino acids  
    (B) TYPE: amino acid  
    (C) STRANDEDNESS:  
    (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:114:

Ser Gln Thr His Gln Ala Ser Leu Ser Lys Gln Pro  
1                    5                    10

(2) INFORMATION FOR SEQ ID NO:115:

- (i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 13 amino acids  
    (B) TYPE: amino acid  
    (C) STRANDEDNESS:  
    (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:115:

Val Asp Pro Asn Leu Glu Pro Trp Lys His Pro Gly Ser  
1                    5                    10

(2) INFORMATION FOR SEQ ID NO:116:

- (i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 14 amino acids  
    (B) TYPE: amino acid  
    (C) STRANDEDNESS:  
    (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (A) NAME/KEY: Modified-site  
    (B) LOCATION: 14  
    (D) OTHER INFORMATION: /note= "An amide is attached to Ser  
in position 14"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:116:

Cys Val Asp Pro Asn Leu Glu Pro Trp Lys His Pro Gly Ser  
1                    5                    10

(2) INFORMATION FOR SEQ ID NO:117:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 15 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:117:

Cys	Arg	Gln	Arg	Arg	Arg	Ala	Pro	Asp	Ser	Ser	Gln	Asn	His	Gln
1				5					10					15

(2) INFORMATION FOR SEQ ID NO:118:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 9 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:118:

Glu	Pro	Val	Asp	Pro	Lys	Leu	Glu	Pro
1				5				

(2) INFORMATION FOR SEQ ID NO:119:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 9 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:119:

Glu	Pro	Val	Asp	Pro	Ser	Leu	Glu	Pro
1				5				

(2) INFORMATION FOR SEQ ID NO:120:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 9 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

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(xi) SEQUENCE DESCRIPTION: SEQ ID NO:120:

Glu Pro Val Asp Pro Asn Leu Glu Pro  
1 5

(2) INFORMATION FOR SEQ ID NO:121:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 7 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS:  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:121:

Arg Arg Ala His Gln Asp Ser  
1 5

(2) INFORMATION FOR SEQ ID NO:122:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 12 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS:  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:122:

Ser Gln Thr His Gln Val Ser Leu Ser Lys Gln Pro  
1 5 10

(2) INFORMATION FOR SEQ ID NO:123:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 4 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS:  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

(A) NAME/KEY: Modified-site  
(B) LOCATION: 1  
(D) OTHER INFORMATION: /note= "Biotin is attached to Ser  
in position 1"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:123:

Ser Gly Ser Gly  
1

(2) INFORMATION FOR SEQ ID NO:124:

- (i) SEQUENCE CHARACTERISTICS:  
  (A) LENGTH: 9 amino acids  
  (B) TYPE: amino acid  
  (C) STRANDEDNESS:  
  (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (A) NAME/KEY: Modified-site  
  (B) LOCATION: 7  
  (D) OTHER INFORMATION: /note= "Amino acid in position 7  
can be Arg, Lys Ser or Asn"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:124:

Glu Pro Val Asp Pro Xaa Leu Glu Pro  
1                  5